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Comparisons of the places of Mars calculated from Newcomb's Tables, with the places calculated from Le Verrier's Tables, near the times of Opposition in 1907 *and* 1909. By A. M. W. Downing, D.Sc., F.R.S.

These comparisons have been made by reducing the quantities given in the *Nautical Almanac* from Greenwich noon to Paris noon at convenient intervals, and then finding the differences between the reduced quantities and the corresponding quantities in the *Connaissance des Temps.*

It will be noticed that at these oppositions, when the planet is nearly at its least possible distance from the Earth, the differences in the heliocentric places derived from the two sets of Tables are much magnified when the transformation to geocentric places is effected. Also it must be remembered that different Tables of the Sun (Newcomb's and Le Verrier's respectively) are employed in making the transformation in the two cases. It will be remarked, however, that the difference in heliocentric longitude, which vanishes in 1907 September, is as much as 4″ in 1909 September. It appears desirable, at the present time, to draw attention to this discordance, as well as to the corresponding discordances in the geocentric places, which amount to comparatively large quantities at the epochs considered.

Mars 1907—*Corrections to Le Verrier's Tables.*

Day 1907.		R.A. Time.	R.A. Arc.	Decl.
		s	″	″
May	26	+·16	+2·2	−0·8
June	3	·17	2·3	0·8
	11	·23	3·1	0·6
	19	·28	3·8	0·8
	27	·28	3·8	1·2
July	5	·29	3·9	1·4
	13	·28	3·7	1·2
	21	·25	3·4	1·8
	29	·19	2·5	1·7
Aug.	6	·14	1·9	1·6
	14	+·13	+1·7	−1·1

On July 5 (near the time of Opposition):—

the correction to Le Verrier's heliocentric longitude of Mars is + 0″·7;
the correction to Le Verrier's longitude of the Sun is − 0″·5;
the distance of Mars from the Earth is 0·41.

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Mars 1909—*Corrections to Le Verrier's Tables.*

Day 1909.		R.A. Time.	R.A. Arc.	Decl.
		s	″	″
Aug.	14	− ·46	− 6·9	− 4·5
	22	50	7·5	4·8
	30	·58	8·7	5·1
Sept.	7	·66	9·9	5·8
	15	·70	10·5	5·8
	23	·70	10·5	5·5
Oct.	1	·72	10·8	5·6
	9	·70	10·5	4·9
	17	·60	9·0	4·2
	25	·58	8·7	4·3
Nov.	2	− ·52	− 7·8	− 4·0

On September 23 (near the time of Opposition):—

the correction to Le Verrier's heliocentric longitude of Mars is $-4''\cdot1$;

the correction to Le Verrier's longitude of the Sun is $-0''\cdot9$;

the distance of Mars from the Earth is 0·39.

1907 *September* 23.

Errata in Mr. Innes's Paper on the Computation of Secular Perturbations,—M. N., vol. lxvii., No. 7.

To distinguish k_1 on pp. 431, 438, 439, lines 19 and 20, and 443, from the k_1 of the cubic on p. 432, etc., write k'.

p. 431, table, and p. 432, line 2,

for $\dfrac{a}{r_0}$ *read* $\dfrac{a}{r}$

p. 440. In

$$\left(3\chi-\frac{1}{4}g_2r_0\right)\frac{F_B}{\lambda^{\frac{7}{4}}}+\frac{F_A}{\lambda^{\frac{5}{4}}}$$

interchange suffices $_A$ and $_B$, and then

for $\dfrac{F_B}{\lambda^{\frac{5}{4}}}$ *read* $\phi\dfrac{F_B}{\lambda^{\frac{5}{4}}}$

p. 442 and p. 443. Interchange the numerical values of the F functions.

For a numerical application of the formulæ see Mr. C. J. Merfield's paper to be published shortly in the *Astr. Nachr.*

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